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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/665,978	09/20/2000	Danelle Mary Tanner	SD6483/S93721	8485

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Sandia National Laboratories  
Patent & Licensing Center  
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Albuquerque, NM 87185-0161

EXAMINER
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DAVIS, OCTAVIA L

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/665,978

Applicant(s)

Turner et al

Examiner

Octavia Davis

Art Unit

2855



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Serial Number: 09/665, 978

Art Unit: 2855

## **DETAILED ACTION**

### ***Inventorship***

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the polygon shape of the annulus material must be shown or the feature canceled from the claims. No new matter should be entered.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal

phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract is objected to because it contains less than 50 words.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1 - 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1, which discloses " a displacement gauge " is not described in the specification.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Que et al.

Regarding claims 1 and 11, Lewis discloses a micromechanical sensing apparatus comprising a substrate 14, a deflection element 12 comprising at least one anchor site and at least one input site, an anchor 14 for each anchor site extending between the substrate and anchor site ( See Col. 12, lines 14 - 25, See Figs. 11 and 20 ) but does not disclose a force coupler transferring force from an external source to the input site and a gauge attached to the element. However, Que et al disclose a micromechanical optical modulator comprising a force coupler 162 transferring force from an external source to an input site of anchor 77 and a gauge 165 working in conjunction with a deflecting element 69 ( See Col. 12, lines 14 - 25, See Figs. 11 and 20 ). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lewis according to the teachings of Que et al for the purposes of, utilizing a directional coupler to transmit force or light to an object and sensing the position of a gate by detecting the intensity of a transmitted beam, the gate being connected to a diaphragm that deflects with pressure changes ( See Que et al, Cols. 2 and 12, lines 47 - 58 and 15 - 16 ).

Regarding claim 2, in Lewis, the deflection element 12 is one of silicon.

Regarding claims 3, 5 and 6, in Lewis, the element 12 comprises an annulus of material having a rectangular cross-section.

Regarding claim 4, in Lewis, the element 12 has a line of mirror symmetry.

Regarding claims 7 and 8, Lewis lacks the gauge comprising indicators mechanically coupled to displacements of the element, the indicators being coupled to a different point on the element. However, in Que et al, indicators 61, 64 are

mechanically coupled to displacement means 69 of the substrate 60, the indicators being coupled to a different point on the substrate ( See Fig. 11 ). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lewis according to the teachings of Que et al for the purpose of, incorporating the optical micromechanical modulator in communication systems to redirect light beams, using input and output waveguides ( See Que et al, Col. 2, lines 63 - 67 ).

Regarding claim 9, Lewis lacks the gauge including an optically readable distance scale. However, in Que et al, the output of the optical system may be modeled in a program of which output includes coupling distance ( See Col. 7, lines 38 - 41 ). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lewis according to the teachings of Que et al for the purpose of, monitoring beam profiles ( See Que et al, Col. 7, lines 33 - 43 ).

Regarding claim 10, in Lewis, a calibration force input is provided ( See Col. 5, lines 8 - 21 ).

Regarding claims 12 - 14, Lewis lacks an element restraint system comprising motion guides and ring constraints. However, in Que et al, guides 61, 64 are provided of which are restrained by clamp sections 86 and 91, the sections being mounted to anchors 87 and 89 ( See Cols. 8 and 9, lines 53 - 67 and 1 - 23, See Fig. 12 ). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lewis according to the teachings of Que et al for the purpose of, utilizing a clamp mechanism to mountably hold the guides in place ( See Que et al, Col. 10, lines 37 - 39 ).

8. Any inquiry concerning this communication should be directed to Examiner Octavia Davis at telephone number ( 703 ) 306 - 5896. The examiner can normally be reached on Monday - Thursdays ( 9:00 - 5:00 ), Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on ( 703 ) 305 - 4816. The fax phone number for the organization where this application or proceeding is assigned is ( 703 ) 746 - 4409.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is ( 703 ) 308 - 0956.

OD

OD/2855

5/15/03

  
EDWARD LEFKOWITZ  
SUPERVISORY PATENT EXAMINER  
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